ABSTRACT

A chemical adsorption system and method comprising an apparatus containing a solid adsorption article comprising a known amount of a chemical adsorbate

5   material disposed on a solid adsorbent material. Trace amounts of the adsorbate are released from the adsorbent using an inert gas. By controlling various parameters such as the temperature of the adsorption article, the amount of the adsorbate on the adsorbent, and the flow rate of inert gas through the apparatus, the amount of chemical adsorbate material vapor that is released from the

10   adsorbent can be precisely controlled and predicted. The apparatus contains no liquid chemical materials, and serves as both an internal chemical reference standard to the attached chemical vapor monitor and as a chemical surface passivator. Furthermore, the invention is capable of spanning several orders of magnitude in chemical vapor concentration from the parts-per-million (ppm) to

15   parts-per-trillion (ppt) range.